Climate change and desertification in Africa : The Great Green Wall

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COP 23 CONVENTION-CADRE DES NATIONS UNIES SUR LES CHANGEMENTS CLIMATIQUES
Table ronde du Département Afrique « Changement climatique : Quels impacts pour l'Afrique ? » Bonn, Allemagne, Pavillon UNESCO

Desertification in Sahel

Structuring fact

Among causes :

Climate variability

Anthropic pressure (pastoralism)

80% loss of plant populations since the 50's

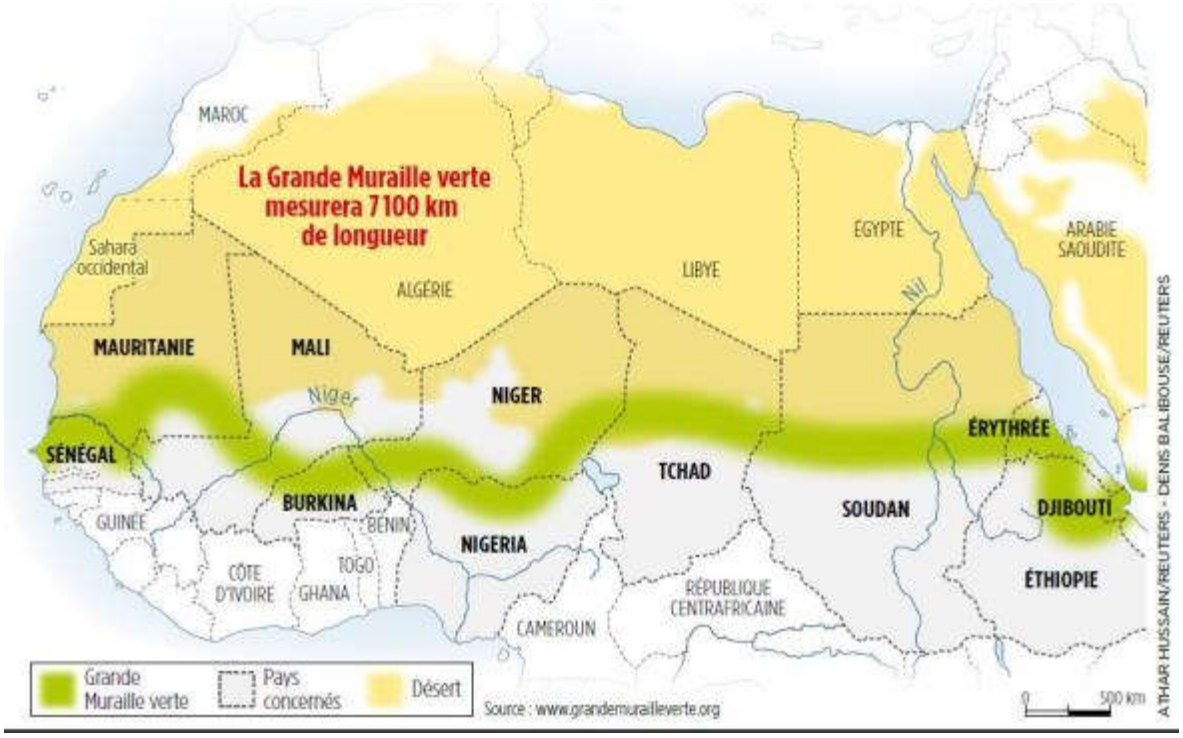
Great Green Wall

Ground breaking event

11 African states :

* **African** approach : initiated by and for African people

* **International** approach : a coordinated GGW action



* **Environmental** approach : redensification, with particular attention given to African populations and their involvement in the project

In Senegal

Operated by the Senegalese National Great Green Wall Agency

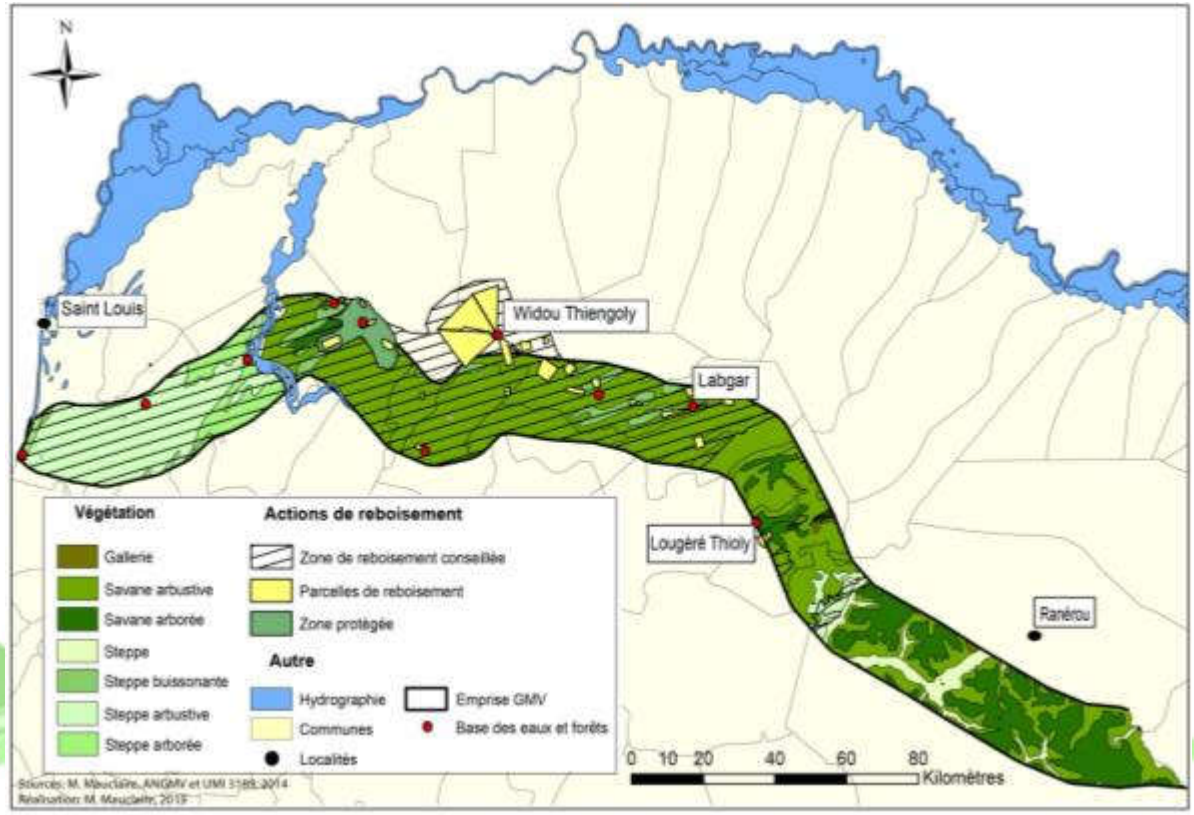
Redensification

General alignment vs. Local implementation, affected by local constraints (land use, housing, transhumance…)

Technical operations 2008-2017 :

* **20 465 000** plants in nurseries

* **48 027** ha of plantation area (70 % mean survival rate)



In Senegal

Redensification => Multi-track approach :

* Sustainable management of natural resources : species selection according to climatic adaptability and social practices

* Combating poverty

« Useful » trees selection

Seasonal jobs

Fodder stocks

Drip irrigated gardens

Hives

Impacts of the GGW

Project implementers

Senegalese National Great Green Wall Agency

Researchers

Human populations

Plant populations

Animal populations

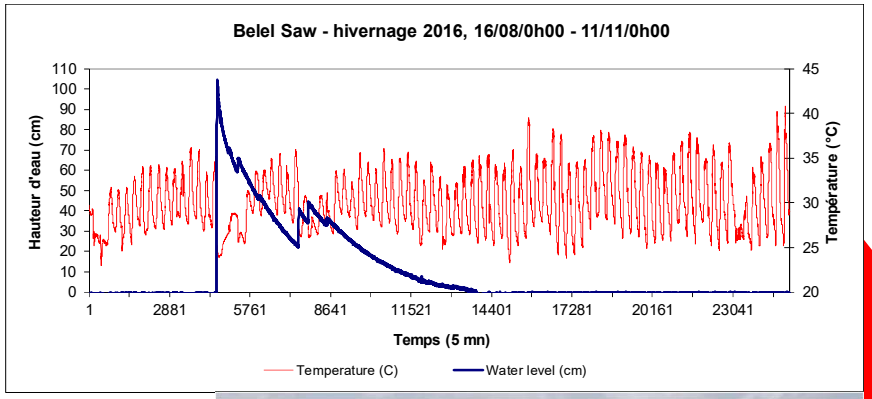
Biotope

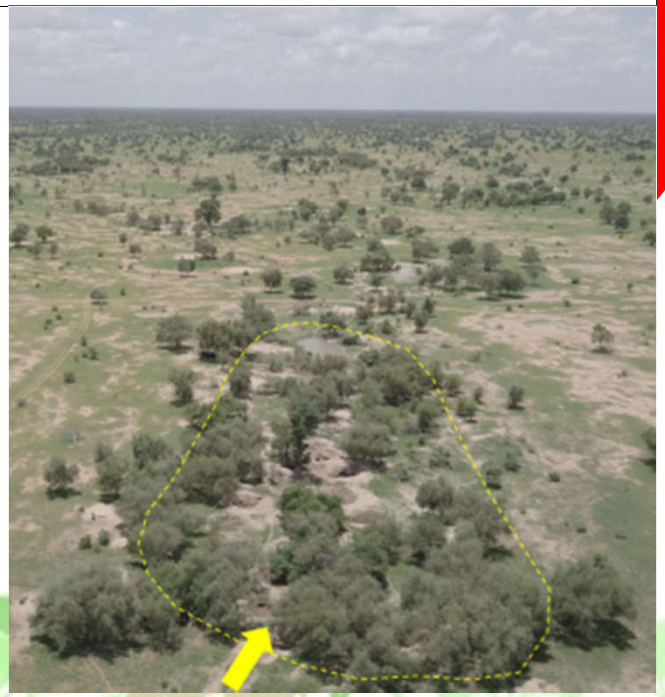
Impacts of the GGW

Hydrology

Climatology

Toxicology





Biotope dynamics

Impacts of the GGW

Biotope dynamics ⟷ **Plant populations dynamics**

Organic chemistry

Ecology

Microbiology

Redensification evaluation

Grass cover dynamics

Plant biodiversity dynamics

Impacts of the GGW

Plant biodiversity dynamics ⟷ **Animal populations dynamics**

- Genetics
- Ecology
- Zoology

Insect species diversity

Mammal species diversity

Bird species diversity

Impacts of the GGW

All dynamics ⟷ **Human populations dynamics**

1. **Social systems**

Sociology

Water use

Economic activities

Anthropology

Communications

Alimentation

Economy

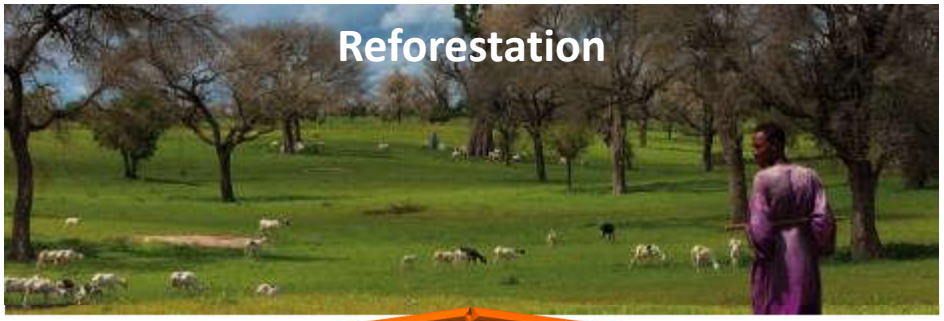
Social dynamics linked to the GGW project

Impacts of the GGW

All dynamics ⟷ **Human populations dynamics**

1. Social systems
2. **Health**

Epidemiology | **Parasitology** | **Sociology** | **Anthropology**



« If we plant trees, they will hold back the bad wind. I think that it will improve our health. » (Women, 62 years, Ferlo)

→ **Air pollution (asthma, BPCO)**

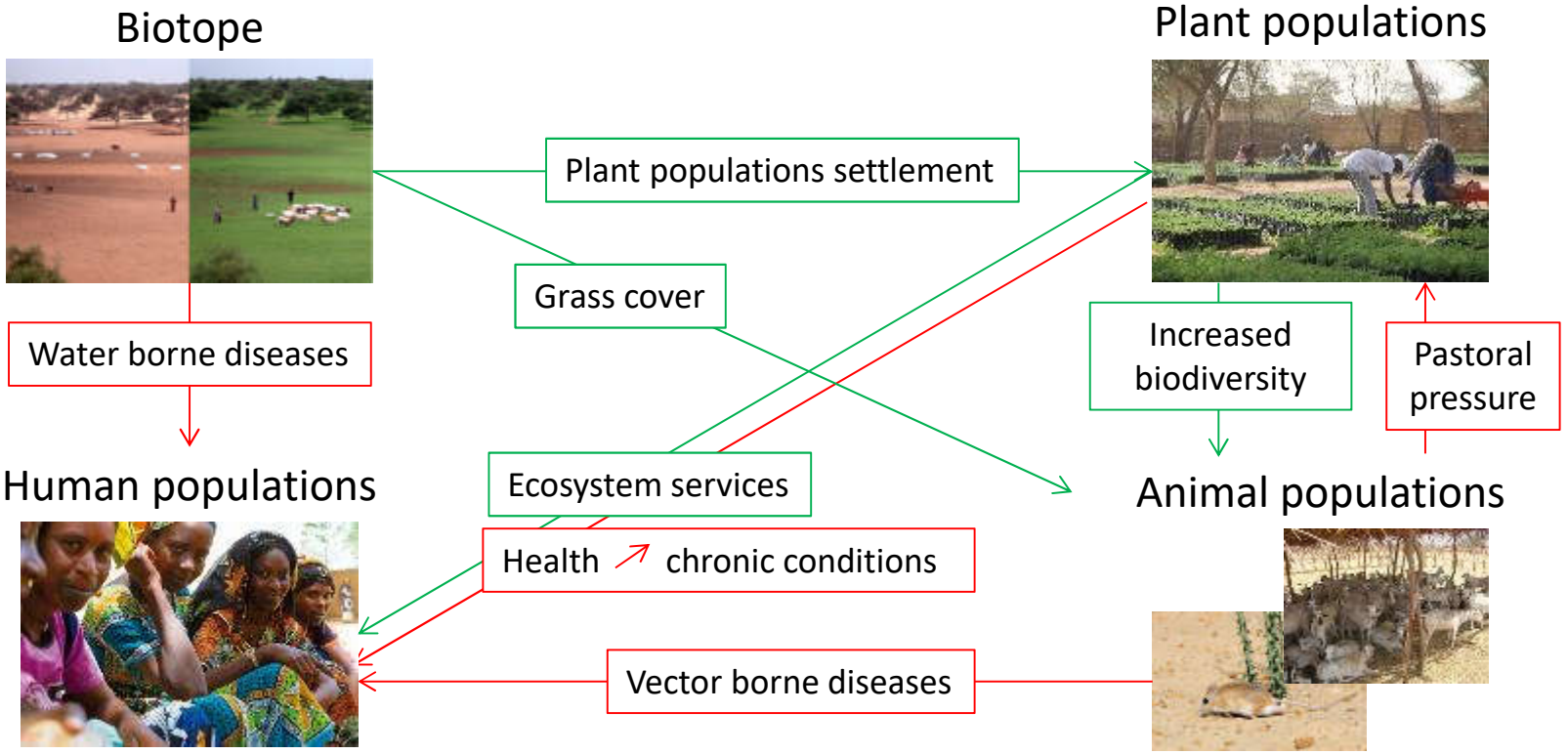
« For example, if there is water, animals can drink in the forest, and we can drink the water from the borehole. » (Women, 35 years, Ferlo)

→ **Animal pollution**
→ **Vector-borne diseases?**
Transmissible diseases

« Vegetables that grow in the field improve health, it is good to put tension down. » (Women, 31 years, Ferlo)

→ **Non communicable diseases (hypertension, diabetes) and chronic conditions**

Conclusion 1 : Global ecology and interdisciplinary research



Conclusion 2 : knowledge transfer

Researchers

Project implementers

Collaboration
Knowledge transfer

Senegalese National Great Green Wall Agency

- Climatology
- Sociology
- Microbiology
- Zoology
- Genetics
- Economy
- Ecology
- Sociology
- Anthropology
- Parasitology
- Toxicology
- Epidemiology
- Organic chemistry
- Hydrology

Experimentation and innovation

Conversion units

Solid water

Cosmetic plants

Antihypertensive plants

Aphrodisiac plants